This document identifies bridging standards in the 2016 *Mathematics Standards of Learning.* Bridging standards allow for the identification of content that can be connected when planning instruction and promote deeper student understanding.

Bridge icon Bridging standards (indicated by bold text in the grade level column below) are ones that meet one or more of the following criteria:

* Functions as a bridge to which other content within the grade level/course is connected, either horizontally or vertically;
* Serves as prerequisite knowledge for content to be addressed in future grade levels/courses; or
* Possesses endurance beyond a single unit of instruction within a grade level/course.

The selection of content focus areas, potential connections, and the sequencing of content in this document serve as examples only and are intended to assist with curricular development.

| **Grade 7 Content Focus Areas** | **Prerequisite Knowledge (Linked to JIT  Quick Checks)**  **Grade 5** | **Prerequisite Knowledge (Linked to JIT  Quick Checks)**  **Grade 6** | **Grade 7**  **(Linked to Just In Time Mathematics Quick Checks)** | **n/a** | **Possible Grade 7**  **Connections Across  Content Focus Areas** | **Possible Future Grade Level/Course Content Connections** |
| --- | --- | --- | --- | --- | --- | --- |
|  | n/a | [6.3a](https://www.doe.virginia.gov/home/showpublisheddocument/33263/), [6.3c](https://www.doe.virginia.gov/home/showpublisheddocument/25008/) | [7.1e](https://www.doe.virginia.gov/home/showpublisheddocument/25128/)Identify and describe absolute value of rational numbers |  | Evaluate Algebraic Expressions | Evaluate Algebraic Expressions  (Grade 8) |
|  | n/a | [6.4](https://www.doe.virginia.gov/home/showpublisheddocument/25012/) | [**7.1d**](https://www.doe.virginia.gov/home/showpublisheddocument/25124/) **Determine square roots of perfect squares** |  | Evaluate Algebraic Expressions | Determine Positive and Negative Square Roots  (Grade 8) |
| **Applying Rational Numbers** | [5.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24854/), [5.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24858/) | [6.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24998/) | [**7.1b**](https://www.doe.virginia.gov/home/showpublisheddocument/25116/) **Compare and order numbers greater than zero written in scientific notation** |  | n/a | Compare and Order Real Numbers  (Grade 8) |
|  | [5.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24854/), [5.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24858/) | [6.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24994/), [6.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24998/), [6.3b](https://www.doe.virginia.gov/home/showpublisheddocument/25004/) | [**7.1c**](https://www.doe.virginia.gov/home/showpublisheddocument/25120/) **Compare and order rational numbers** |  | Identify Values in the Solution Set of a Linear Inequality | Compare and Order Real Numbers  (Grade 8) |
|  | [5.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24854/) | [6.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24994/), [6.4](https://www.doe.virginia.gov/home/showpublisheddocument/25012/) | [7.1a](https://www.doe.virginia.gov/home/showpublisheddocument/25112/) Investigate and describe the concept of negative exponents for powers of ten |  | n/a |  |
|  | [5.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24854/), [5.4](https://www.doe.virginia.gov/home/showpublisheddocument/24870/), [5.5b](https://www.doe.virginia.gov/home/showpublisheddocument/24878/), [5.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24882/), [5.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24886/) | [6.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24994/), [6.5a](https://www.doe.virginia.gov/home/showpublisheddocument/25016/), [6.5b](https://www.doe.virginia.gov/home/showpublisheddocument/25020/), [6.5c](https://www.doe.virginia.gov/home/showpublisheddocument/25024/), [6.6a](https://www.doe.virginia.gov/home/showpublisheddocument/25028/), [6.6b](https://www.doe.virginia.gov/home/showpublisheddocument/25032/) | [**7.2**](https://www.doe.virginia.gov/home/showpublisheddocument/25132/) **Solve practical problems involving operations with rational numbers** |  | Solve Practical Problems Using Proportional Reasoning | Solve Practical Problems Involving Consumer Applications  (Grade 8) |
|  | [5.5a](https://www.doe.virginia.gov/home/showpublisheddocument/24874/), [5.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24882/), [5.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24886/), [5.7](https://www.doe.virginia.gov/home/showpublisheddocument/24890/), [5.19a](https://www.doe.virginia.gov/home/showpublisheddocument/24974/) | [6.5a](https://www.doe.virginia.gov/home/showpublisheddocument/25016/), [6.6a](https://www.doe.virginia.gov/home/showpublisheddocument/25028/), [6.6c](https://www.doe.virginia.gov/home/showpublisheddocument/25036/) | [**7.11**](https://www.doe.virginia.gov/home/showpublisheddocument/25192/) **Evaluate algebraic expressions for given replacement values of the variables** |  | Absolute Value and Perfect Squares | Evaluate Algebraic Expressions  (Grade 8) |
| **Solving Algebraic Expressions, Equations, and Inequalities** | [5.5a](https://www.doe.virginia.gov/home/showpublisheddocument/24874/), [5.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24882/), [5.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24886/), [5.19a](https://www.doe.virginia.gov/home/showpublisheddocument/24974/), [5.19b](https://www.doe.virginia.gov/home/showpublisheddocument/24978/), [5.19c](https://www.doe.virginia.gov/home/showpublisheddocument/24982/), [5.19d](https://www.doe.virginia.gov/home/showpublisheddocument/24986/) | [6.5a](https://www.doe.virginia.gov/home/showpublisheddocument/25016/), [6.6a](https://www.doe.virginia.gov/home/showpublisheddocument/25028/), [6.6c](https://www.doe.virginia.gov/home/showpublisheddocument/25036/), [6.13](https://www.doe.virginia.gov/home/showpublisheddocument/25100/) | [**7.12**](https://www.doe.virginia.gov/home/showpublisheddocument/25196/) **Solve two-step linear equations in one variable, including practical problems that require the solution of a two-step linear equation in one variable** |  | n/a | Solve Multistep Linear Equations  (Grade 8) |
|  | n/a | [6.14a](https://www.doe.virginia.gov/home/showpublisheddocument/25104/), [6.14b](https://www.doe.virginia.gov/home/showpublisheddocument/25108/) | [**7.13**](https://www.doe.virginia.gov/home/showpublisheddocument/25200/) **Solve one- and two-step linear inequalities in one variable, including practical problems, involving addition, subtraction, multiplication, and division, and graph the solution on a number line** |  | Compare and Order Rational Numbers | Solve Multistep Linear Inequalities (Grade 8) |
|  | [5.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24854/), [5.4](https://www.doe.virginia.gov/home/showpublisheddocument/24870/), [5.5b](https://www.doe.virginia.gov/home/showpublisheddocument/24878/), [5.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24882/), [5.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24886/), [5.9a](https://www.doe.virginia.gov/home/showpublisheddocument/24902/), [5.9b](https://www.doe.virginia.gov/home/showpublisheddocument/24906/) | [6.1](https://www.doe.virginia.gov/home/showpublisheddocument/24990/), [6.5b](https://www.doe.virginia.gov/home/showpublisheddocument/25020/), [6.5c](https://www.doe.virginia.gov/home/showpublisheddocument/25024/), [6.6b](https://www.doe.virginia.gov/home/showpublisheddocument/25032/), [6.12a](https://www.doe.virginia.gov/home/showpublisheddocument/25084/), [6.12c](https://www.doe.virginia.gov/home/showpublisheddocument/25092/), [6.13](https://www.doe.virginia.gov/home/showpublisheddocument/25100/) | [**7.3**](https://www.doe.virginia.gov/home/showpublisheddocument/25136/) **Solve single-step and multistep practical problems, using proportional reasoning** |  | Solve Practical Problems with Rational Numbers | Solve Practical Problems Involving Consumer Applications  (Grade 8) |
| **Using Proportional Reasoning and Linear Functions** | n/a | [6.1](https://www.doe.virginia.gov/home/showpublisheddocument/24990/), [6.8b](https://www.doe.virginia.gov/home/showpublisheddocument/25076/), [6.12a](https://www.doe.virginia.gov/home/showpublisheddocument/25084/), [6.12b](https://www.doe.virginia.gov/home/showpublisheddocument/25088/), [6.12c](https://www.doe.virginia.gov/home/showpublisheddocument/25092/) | [**7.10a**](https://www.doe.virginia.gov/home/showpublisheddocument/25172/) **Determine the slope, *m*, as rate of change in a proportional relationship between two quantities and write an equation in the form *y* = *mx* to represent the relationship** |  | n/a | Graphs of Linear Functions and Scatterplots  (Grade 8) |
|  | [5.18](https://www.doe.virginia.gov/home/showpublisheddocument/24970/) | [6.1](https://www.doe.virginia.gov/home/showpublisheddocument/24990/), [6.8b](https://www.doe.virginia.gov/home/showpublisheddocument/25076/), [6.12a](https://www.doe.virginia.gov/home/showpublisheddocument/25084/), [6.12b](https://www.doe.virginia.gov/home/showpublisheddocument/25088/), [6.12c](https://www.doe.virginia.gov/home/showpublisheddocument/25092/) | [**7.10b**](https://www.doe.virginia.gov/home/showpublisheddocument/25176/) **Graph a line representing a proportional relationship between two quantities given the slope and an ordered pair, or given the equation in *y* = *mx* form where *m* represents the slope as rate of change** |  | n/a | Graphs of Linear Functions  (Grade 8) |
|  | n/a | [6.8b](https://www.doe.virginia.gov/home/showpublisheddocument/25076/) | [**7.10c**](https://www.doe.virginia.gov/home/showpublisheddocument/25180/) **Determine the *y*-intercept, *b*, in an additive relationship between two quantities and write an equation in the form *y* = *x* + *b* to represent the relationship** |  | n/a | Graphs of Linear Functions  (Grade 8) |
|  | [5.18](https://www.doe.virginia.gov/home/showpublisheddocument/24970/) | [6.8b](https://www.doe.virginia.gov/home/showpublisheddocument/25076/) | [**7.10d**](https://www.doe.virginia.gov/home/showpublisheddocument/25184/) **Graph a line representing an additive relationship between two quantities given the *y*-intercept and an ordered pair, or given the equation in the form *y* = *x* + *b*, where *b* represents the *y*-intercept** |  | n/a | Graphs of Linear Functions  (Grade 8) |
|  | n/a | [6.12a](https://www.doe.virginia.gov/home/showpublisheddocument/25084/), [6.12b](https://www.doe.virginia.gov/home/showpublisheddocument/25088/), [6.12c](https://www.doe.virginia.gov/home/showpublisheddocument/25092/), [6.12d](https://www.doe.virginia.gov/home/showpublisheddocument/25096/) | [**7.10e**](https://www.doe.virginia.gov/home/showpublisheddocument/25188/) **Make connections between and among representations of a proportional or additive relationship between two quantities using verbal descriptions, tables, equations, and graphs** |  | n/a | Graphs of Linear Functions  (Grade 8) |
|  |  | [6.10a](https://www.doe.virginia.gov/home/showpublisheddocument/25050/) | [7.9a](https://www.doe.virginia.gov/home/showpublisheddocument/25204/) Represent data in a histogram |  | Compare and Order Rational Numbers | n/a |
| **Representing Data with Histograms** | [5.16b](https://www.doe.virginia.gov/home/showpublisheddocument/24946/) | [6.10b](https://www.doe.virginia.gov/home/showpublisheddocument/25056/) | [**7.9b**](https://www.doe.virginia.gov/home/showpublisheddocument/25208/) **Make observations and inferences about data represented in a histogram** |  | Compare and Order Rational Numbers | n/a |
|  | [5.16c](https://www.doe.virginia.gov/home/showpublisheddocument/24950/) | [6.10c](https://www.doe.virginia.gov/home/showpublisheddocument/25058/) | [7.9c](https://www.doe.virginia.gov/home/showpublisheddocument/25212/) Compare histograms with the same data represented in stem-and-leaf plots, line plots, and circle graphs |  | Compare and Order Rational Numbers | n/a |
| **Determining Probability** | [5.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24854/), [5.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24858/), [5.15](https://www.doe.virginia.gov/home/showpublisheddocument/24938/) | [6.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24994/), [6.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24998/) | [**7.8a**](https://www.doe.virginia.gov/home/showpublisheddocument/25164/) **Determine the theoretical and experimental probabilities of an event** |  | n/a | Determine Probabilities of Independent and Dependent Events  (Grade 8) |
|  | [5.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24854/), [5.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24858/), [5.15](https://www.doe.virginia.gov/home/showpublisheddocument/24938/) | [6.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24994/), [6.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24998/) | [**7.8b**](https://www.doe.virginia.gov/home/showpublisheddocument/25168/) **Investigate and describe the difference between the experimental probability and theoretical probability of an event** |  | Compare and Order Rational Numbers | Compare and Contrast the Probabilities of Independent and Dependent Events  (Grade 8) |
|  | n/a | [6.9](https://www.doe.virginia.gov/home/showpublisheddocument/25080/) | [7.6a](https://www.doe.virginia.gov/home/showpublisheddocument/25152/) Compare and contrast quadrilaterals based on their properties |  | n/a | Properties of Quadrilaterals  (Geometry) |
|  | [5.13b](https://www.doe.virginia.gov/home/showpublisheddocument/24926/) | [6.9](https://www.doe.virginia.gov/home/showpublisheddocument/25080/) | [7.6b](https://www.doe.virginia.gov/home/showpublisheddocument/25156/)Determine unknown side lengths or angle measures of quadrilaterals |  | n/a | Properties of Quadrilaterals  (Geometry) |
| **Solving Problems Involving Two- and Three- Dimensional Geometry** | [5.13a](https://www.doe.virginia.gov/home/showpublisheddocument/24922/), [5.14b](https://www.doe.virginia.gov/home/showpublisheddocument/24934/) | [6.9](https://www.doe.virginia.gov/home/showpublisheddocument/25080/), [6.12a](https://www.doe.virginia.gov/home/showpublisheddocument/25084/), [6.13](https://www.doe.virginia.gov/home/showpublisheddocument/25100/) | [**7.5**](https://www.doe.virginia.gov/home/showpublisheddocument/25148/) **Solve problems, including practical problems, involving the relationship between corresponding sides and corresponding angles of similar quadrilaterals and triangles** |  | Solve Practical Problems using Proportional Reasoning | Similar Triangles  (Geometry) |
|  | [5.14a](https://www.doe.virginia.gov/home/showpublisheddocument/24930/) | [6.8a](https://www.doe.virginia.gov/home/showpublisheddocument/25072/), [6.8b](https://www.doe.virginia.gov/home/showpublisheddocument/25076/), [6.9](https://www.doe.virginia.gov/home/showpublisheddocument/25080/) | [**7.7**](https://www.doe.virginia.gov/home/showpublisheddocument/25160/) **Apply translations and reflections of right triangles or rectangles in the coordinate plane** |  | n/a | Transformations of Polygons and Applications of Transformations  (Grade 8) |
|  | [5.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24894/), [5.8b](https://www.doe.virginia.gov/home/showpublisheddocument/24898/), [5.10](https://www.doe.virginia.gov/home/showpublisheddocument/24910/) | [6.7b](https://www.doe.virginia.gov/home/showpublisheddocument/25044/), [6.7c](https://www.doe.virginia.gov/home/showpublisheddocument/25048/) | [**7.4a**](https://www.doe.virginia.gov/home/showpublisheddocument/25140/) **Describe and determine the volume and surface area of rectangular prisms and cylinders** |  | Evaluate Algebraic Expressions | Surface Area and Volume of Cones and Square-Based Pyramids  (Grade 8) |
|  | [5.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24894/), [5.8b](https://www.doe.virginia.gov/home/showpublisheddocument/24898/), [5.10](https://www.doe.virginia.gov/home/showpublisheddocument/24910/) | [6.7b](https://www.doe.virginia.gov/home/showpublisheddocument/25044/), [6.7c](https://www.doe.virginia.gov/home/showpublisheddocument/25048/) | [7.4b](https://www.doe.virginia.gov/home/showpublisheddocument/25144/) Solve problems, including practical problems, involving the volume and surface area of rectangular prisms and cylinders |  | Evaluate Algebraic Expressions | Surface Area and Volume of Cones and Square-Based Pyramids  (Grade 8) |